

Climate Prediction Center Outlooks

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NOAA Climate Prediction Center / NCEP / National Weather Service

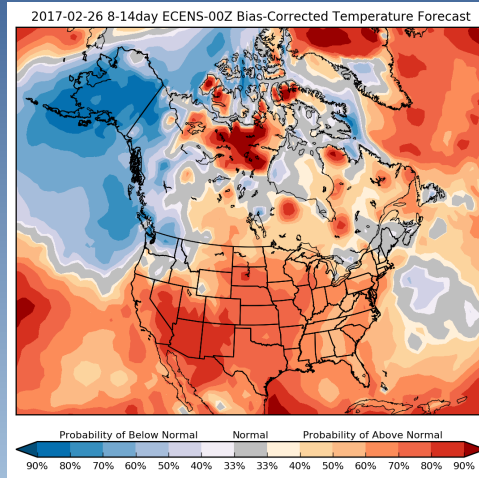
Northeast Drought Assessment, February 2017

Extended Range (6-10 & 8-14 day)
Operational forecasts

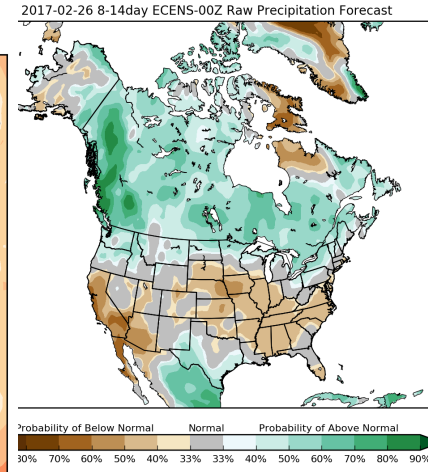
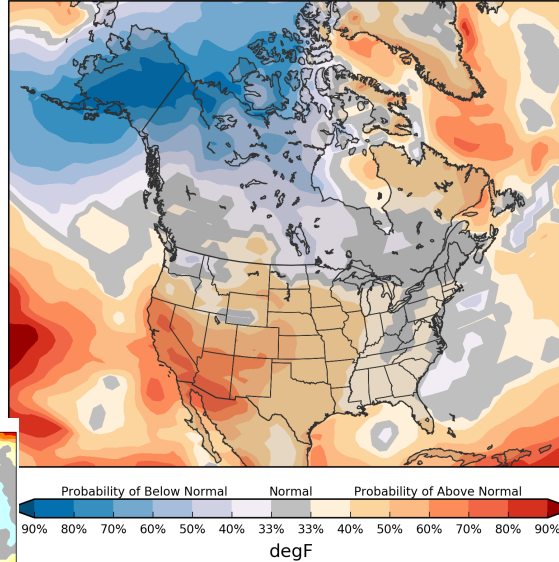
Extended Range (6-10 & 8-14 day)

- At the interface of weather & climate
- Forecast is primarily based on dynamical model ensemble prediction systems
- Mostly automated, with quality control and adjustments by a forecaster
- Climate influences, such as ENSO (the El Nino Southern Oscillation), play a secondary role to atmospheric initial conditions

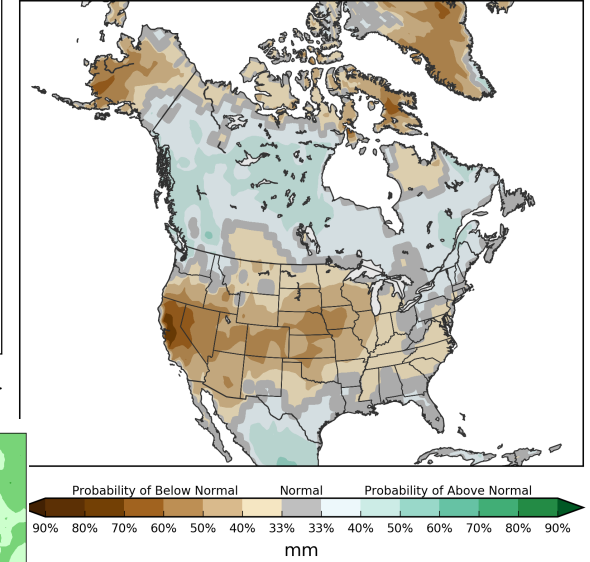
Extended Range (6-10 & 8-14 day)



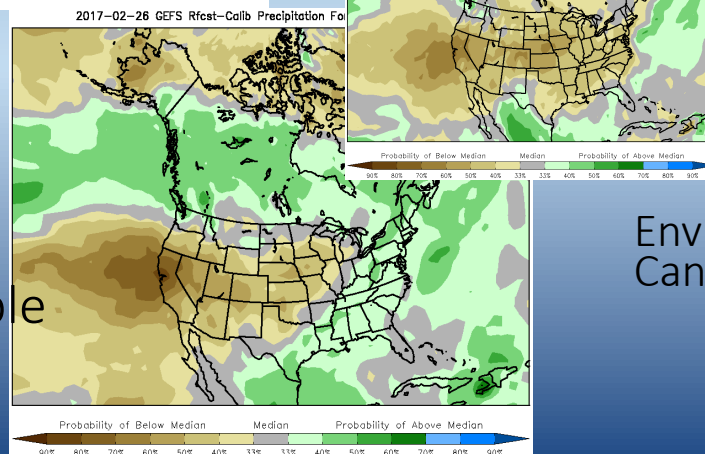
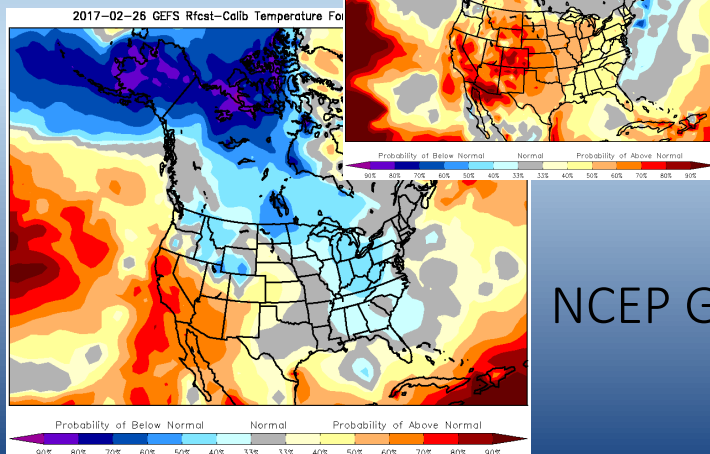
Consolidated 8-14day tmean issued 20170226
valid 20170306 - 20170312



Consolidated 8-14day precip issued 20170226
valid 20170306 - 20170312



ECMWF



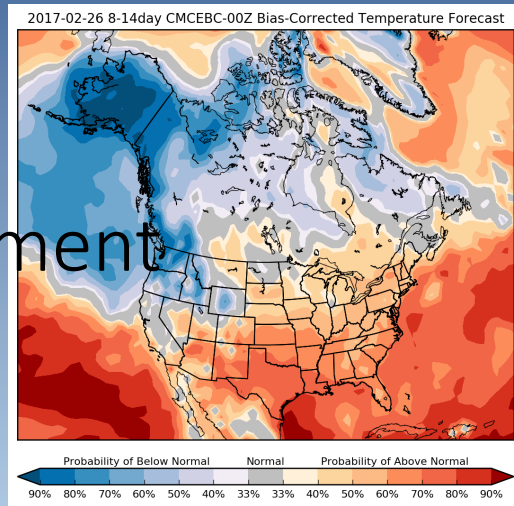
NCEP Global Ensemble

Consolidated ECMWF & NCEP
temperature and precipitation

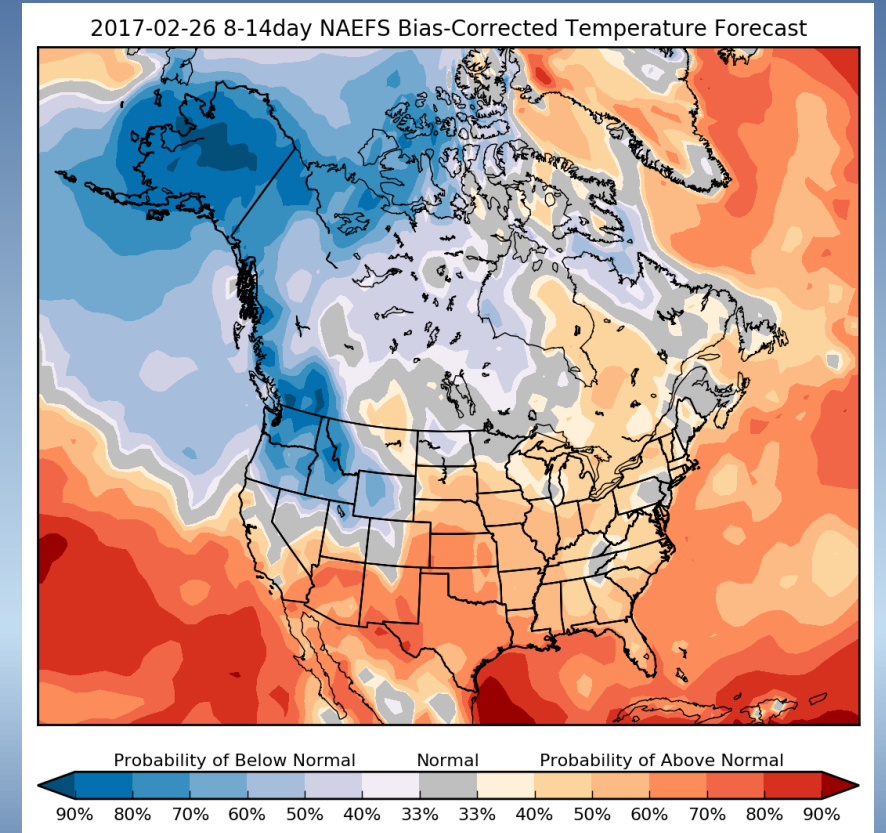
Environment
Canada

Extended Range (6-10 & 8-14 day) North American Ensemble Forecast System

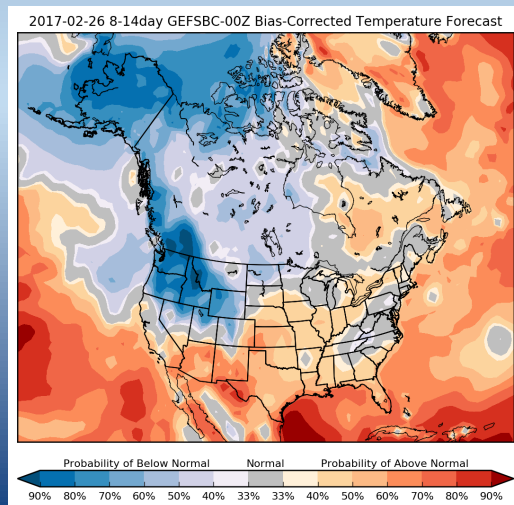
Environment
Canada



NAEFS



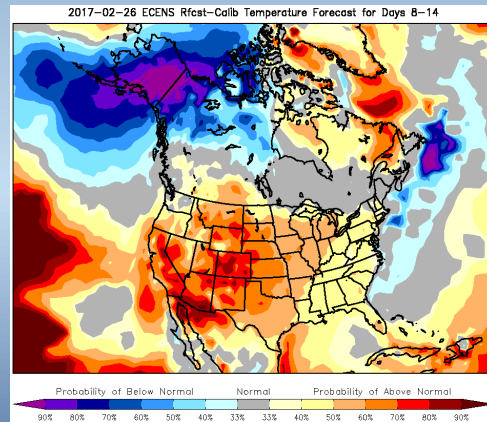
NCEP



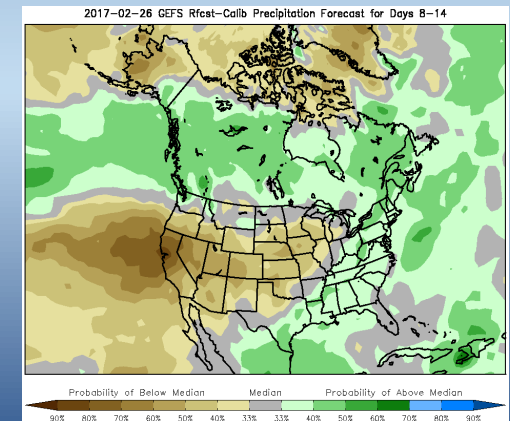
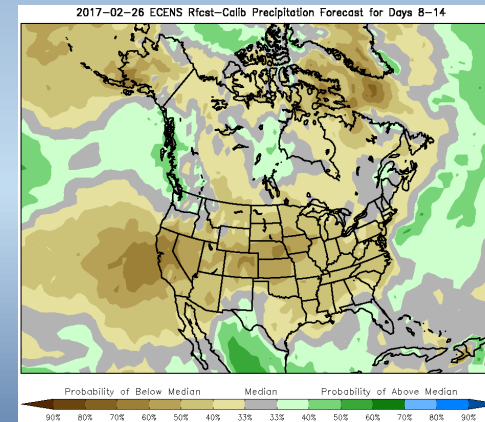
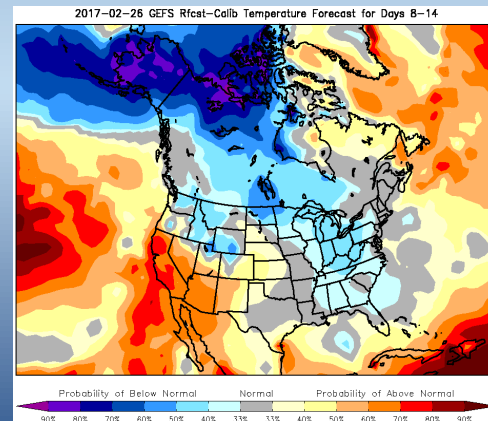
Extended Range (6-10 & 8-14 day) Reforecasts

Bias-corrected and calibrated probabilities using multiple decades of hindcast data

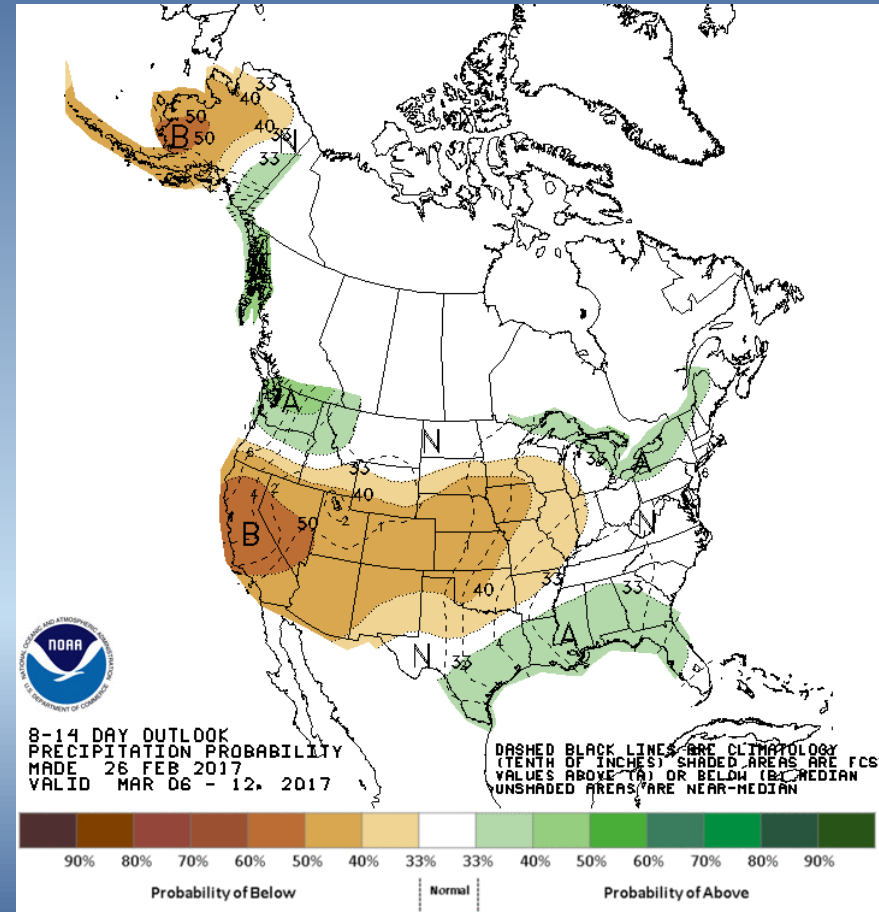
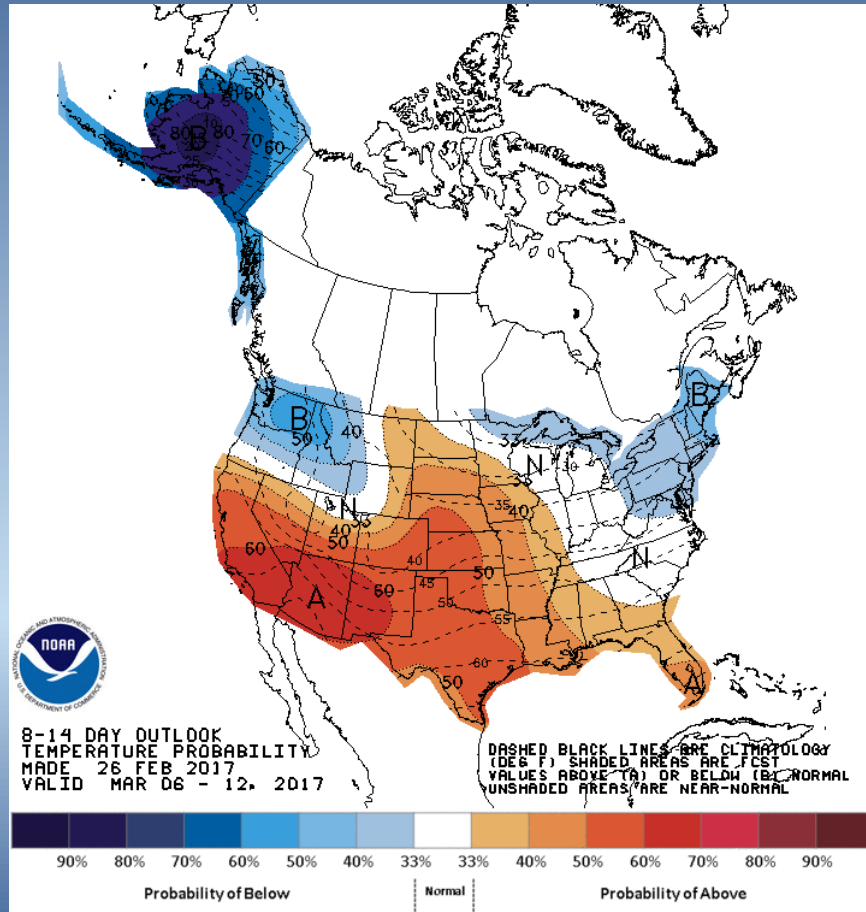
ECMWF



NCEP



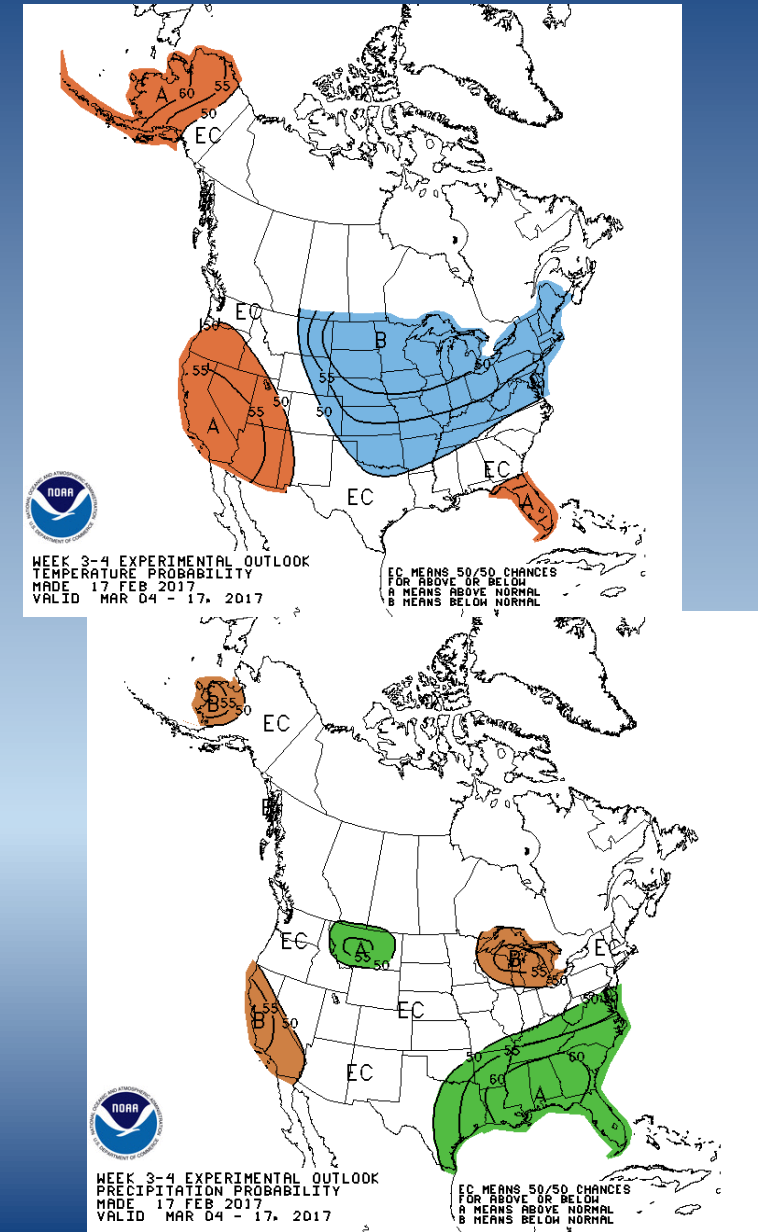
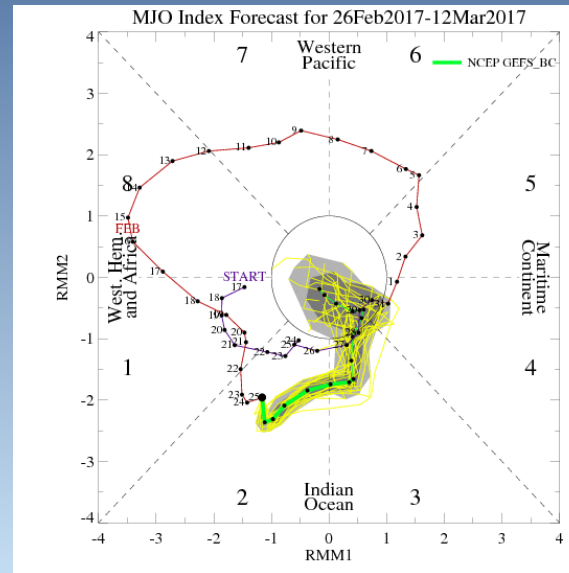
Extended Range 8-14 day Official Outlook



Experimental week 3/4 subseasonal forecasts

Two categories: Above & Below normal

- Dynamical model guidance from the NCEP CFS, ECMWF, JMA, and Environment Canada
- Utilizes statistical tools including:
 - MJO / ENSO Model
 - Constructed Analog
- Subseasonal Experiment (SubX) MME models to provide guidance, in real-time as of FY2018



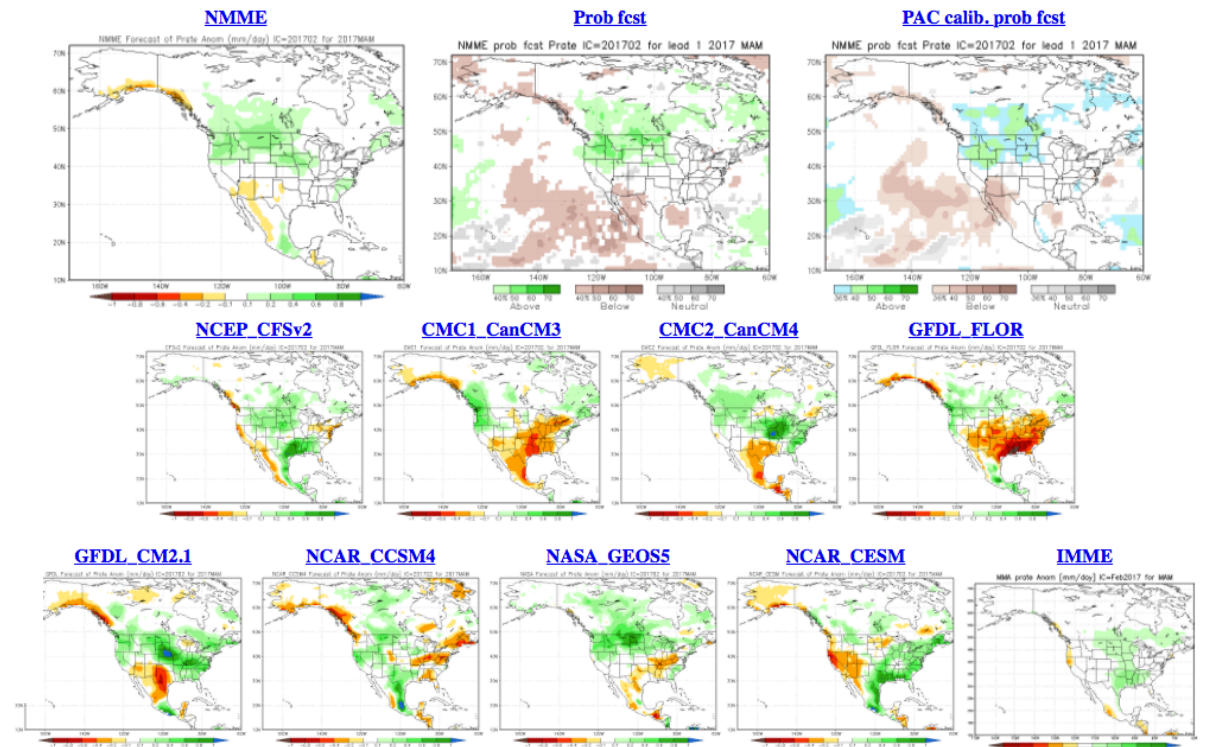
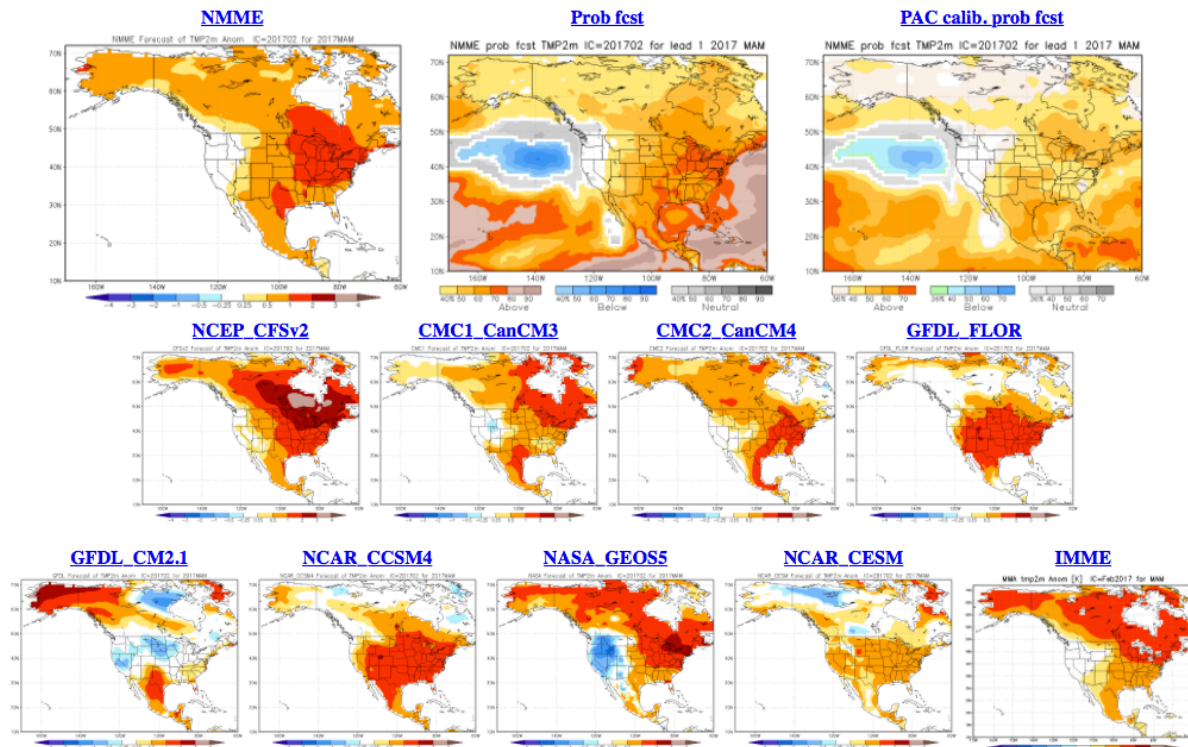
Monthly & Seasonal Operational forecasts

Monthly & Seasonal U.S. Temperature and Precipitation Outlooks

- Predictability relies on Climate Modes of variability
 - El Nino Southern Oscillation, Arctic Oscillation, Pacific Decadal Oscillation, ...
- Coupled Ocean-Atmosphere Models that forecast changes in sea surface temperature boundary conditions
 - NCEP Climate Forecast System
 - North American Multi-Model Ensemble (NMME)
- Long-term trends related to climate change

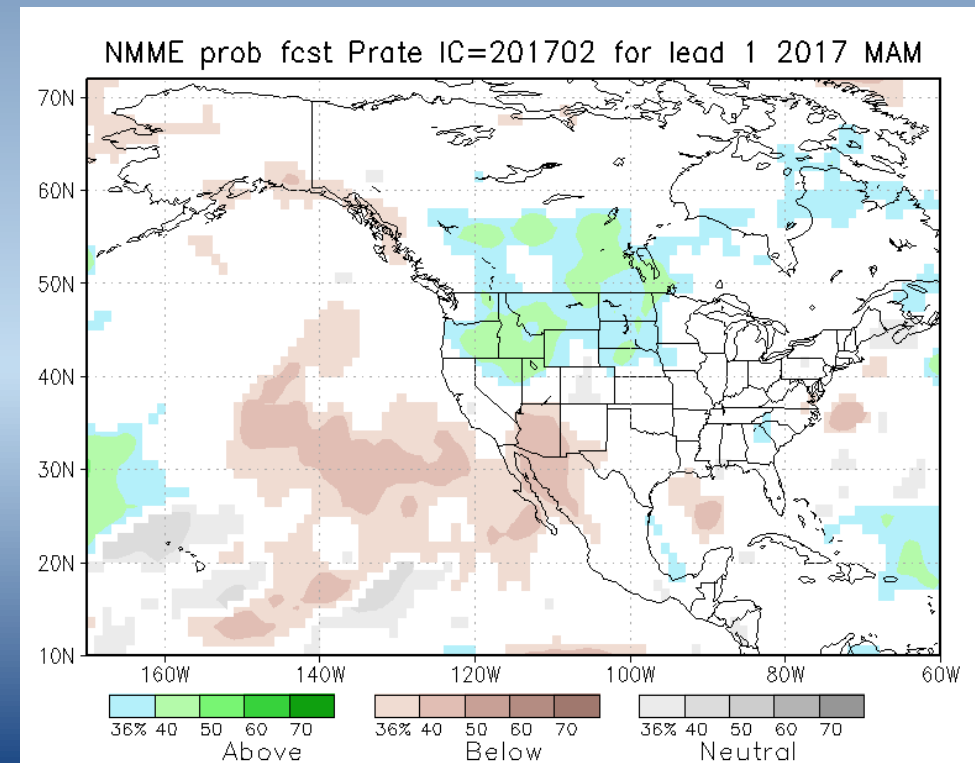
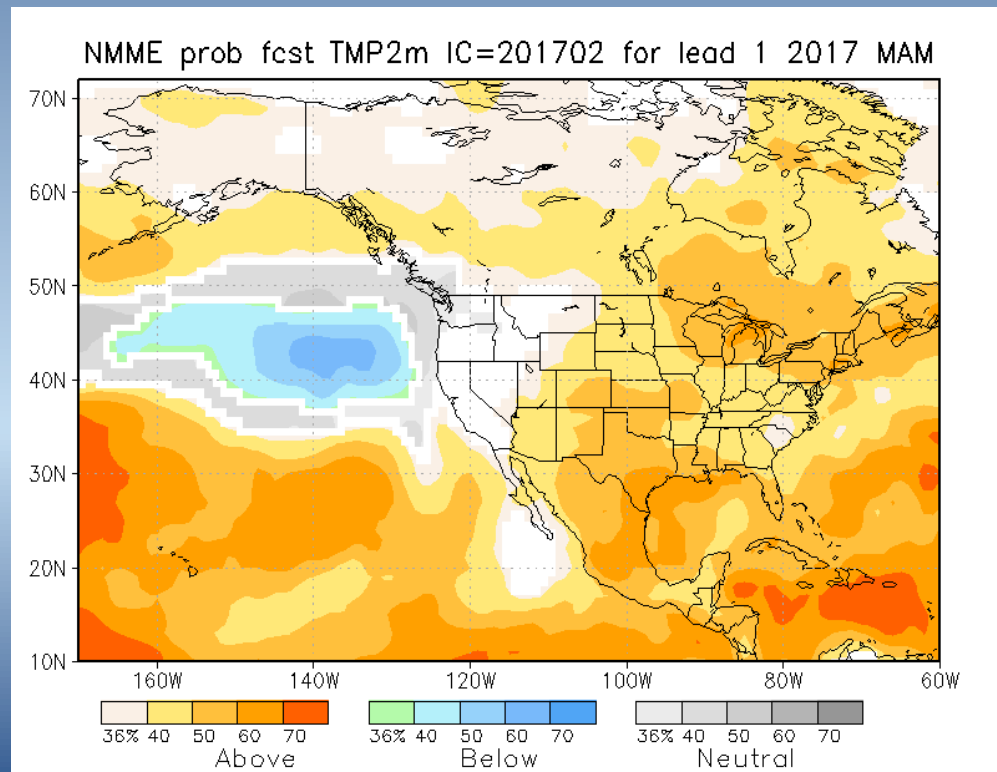
Monthly & Seasonal Temperature & Precipitation NMME

- Coupled Ocean-Atmosphere general circulation models from multiple operational and research modeling centers
- Hindcasts from 1982-2010 for correction and probability calibration



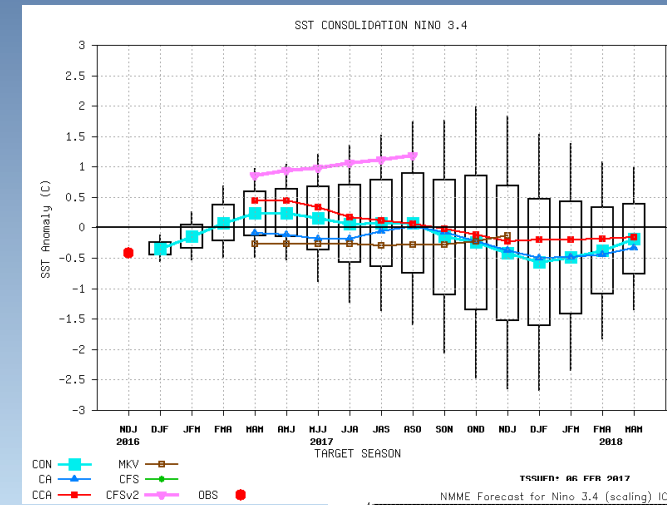
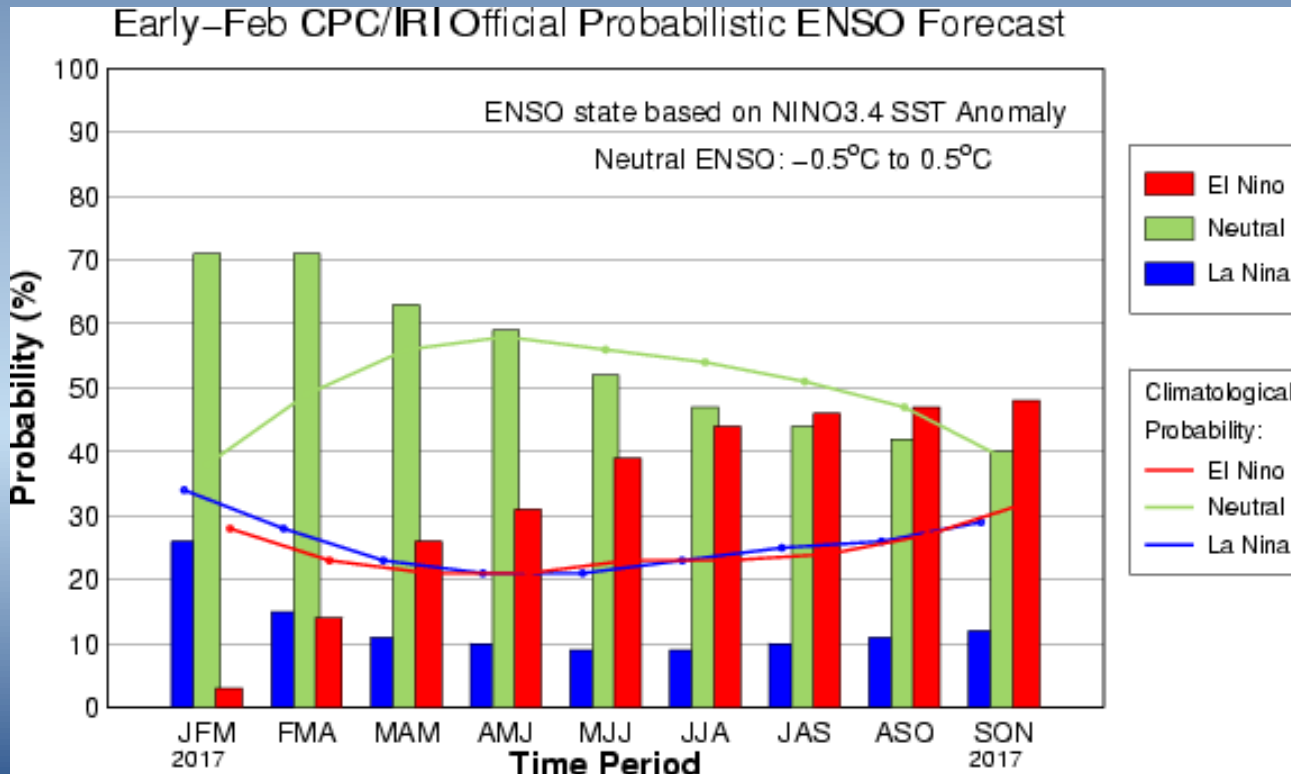
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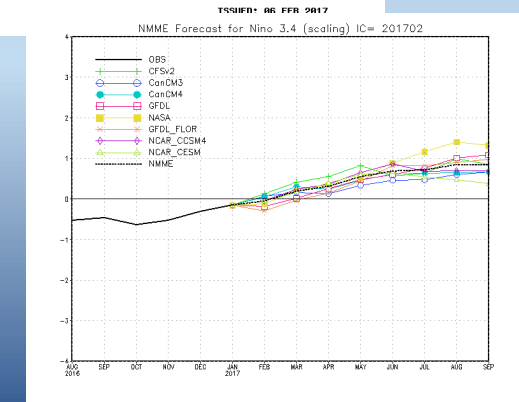


Monthly & Seasonal Temperature & Precipitation ENSO forecast guidance

Consensus of team of forecasters, based on both dynamical & statistical tools



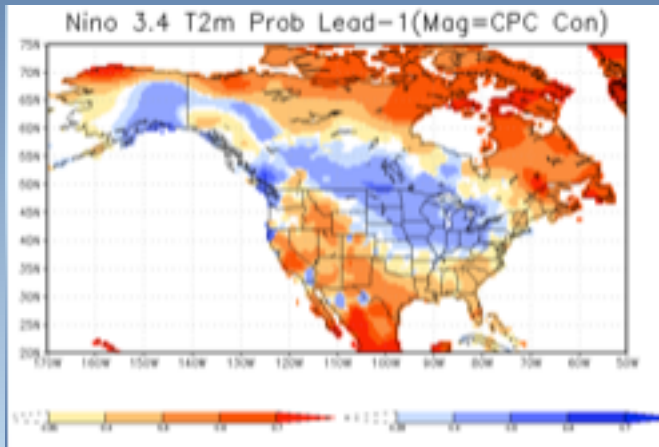
CPC consolidation



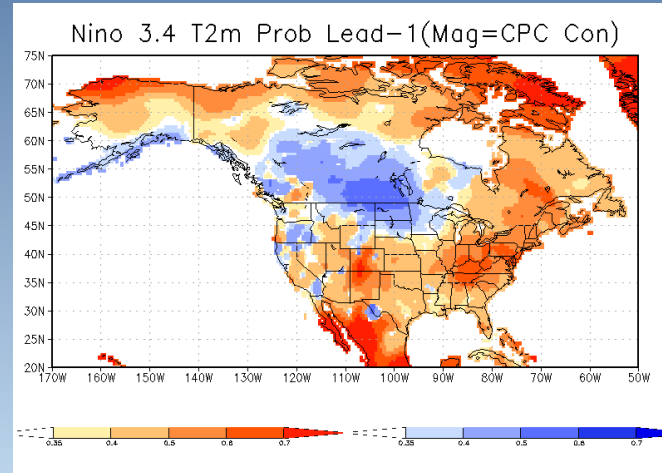
NMME

Monthly & Seasonal Temperature & Precipitation ENSO forecast guidance

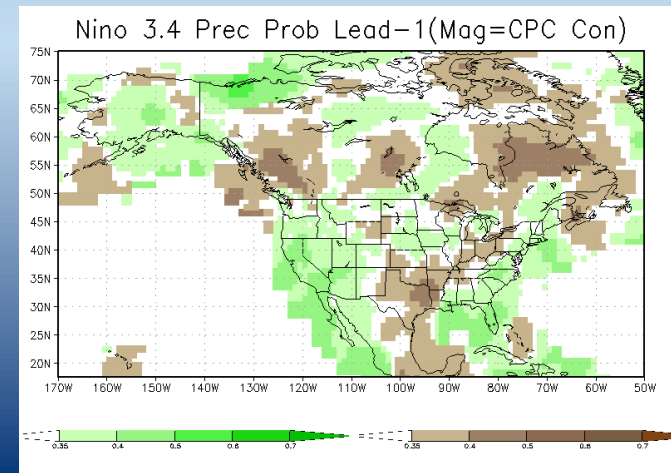
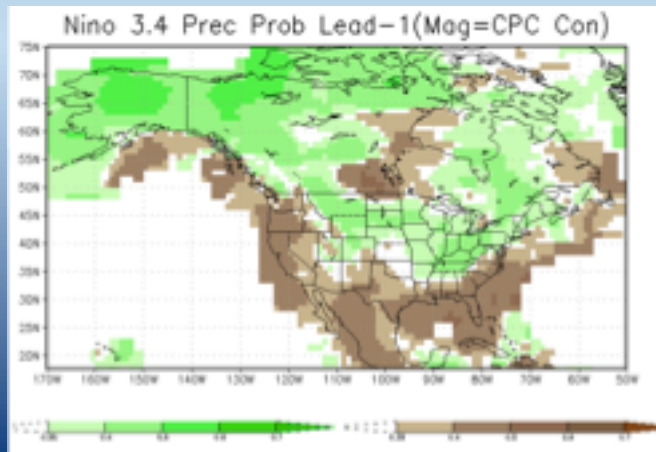
Dynamical model guidance is combined with statistical guidance from ENSO



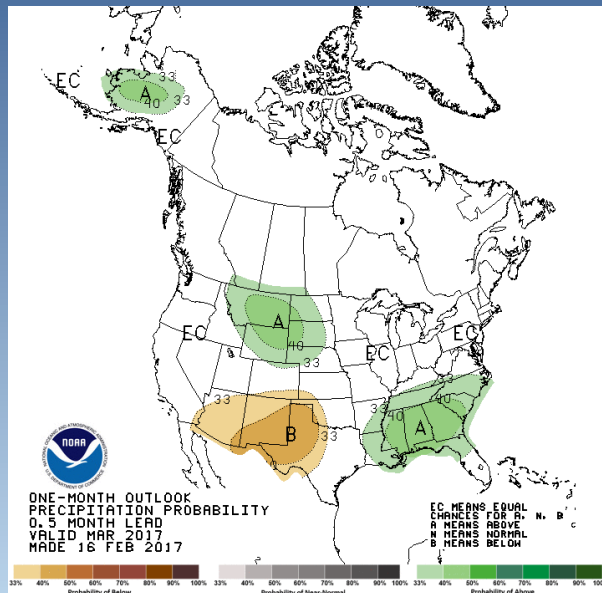
DJF



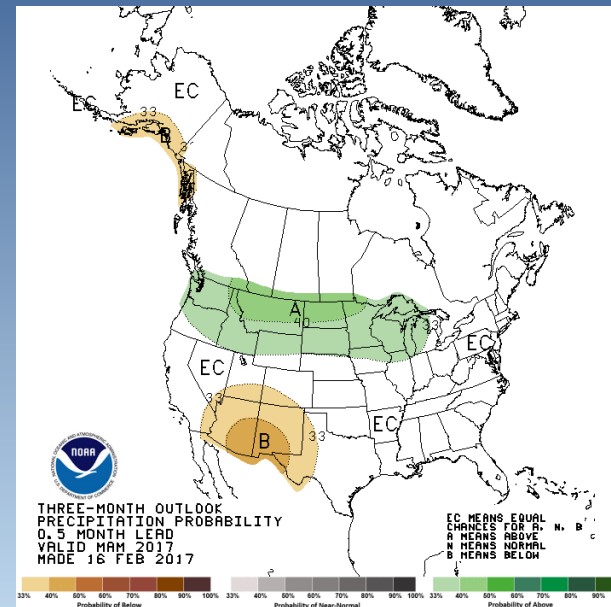
MAM



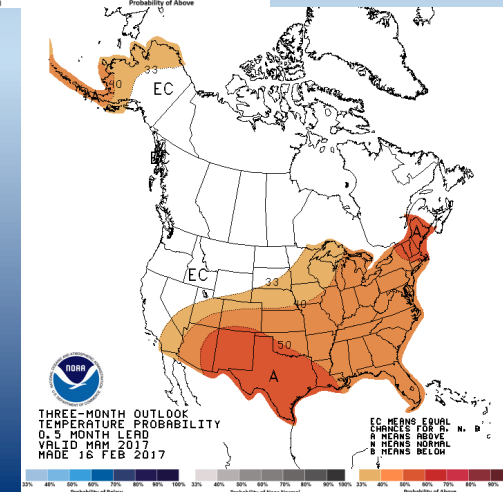
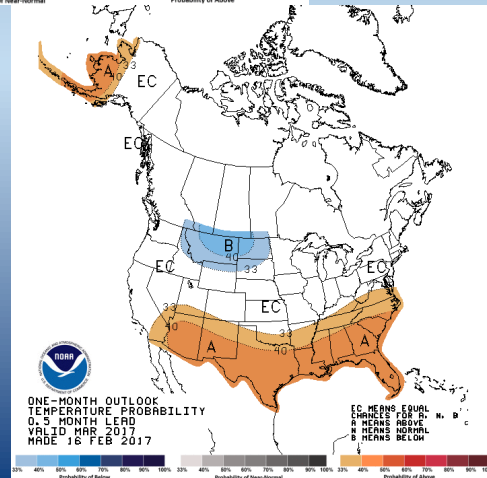
Monthly & Seasonal Temperature & Precipitation Official Outlook



March
Monthly



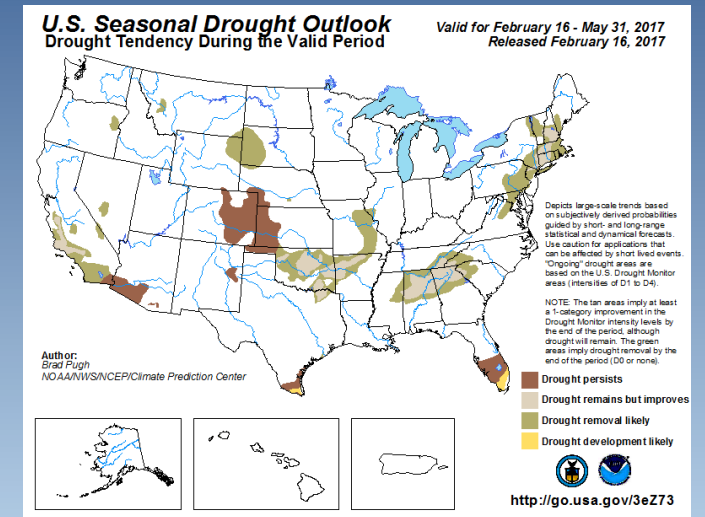
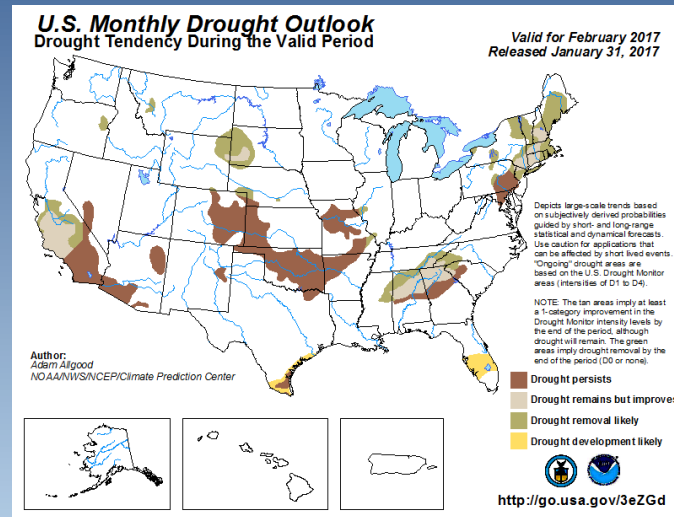
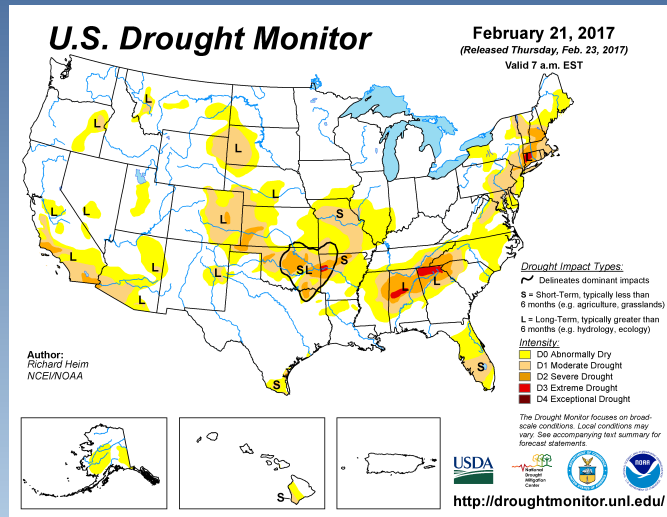
MAM
Seasonal



Monthly & Seasonal Drought Outlook

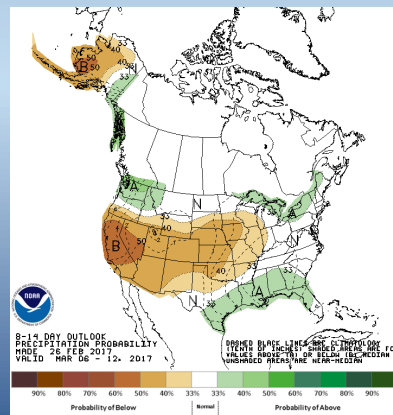
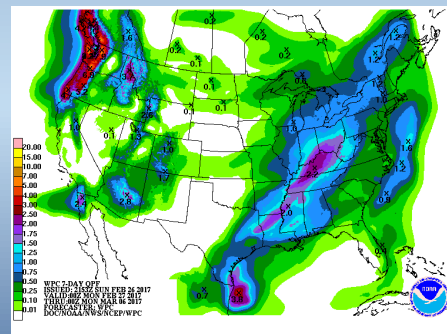
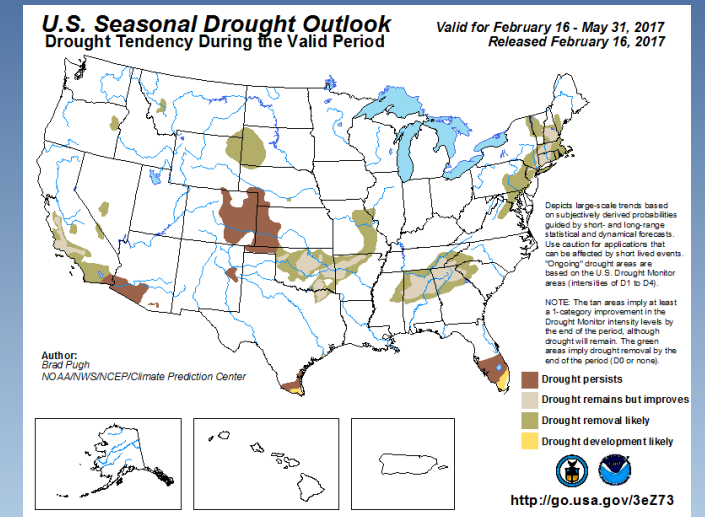
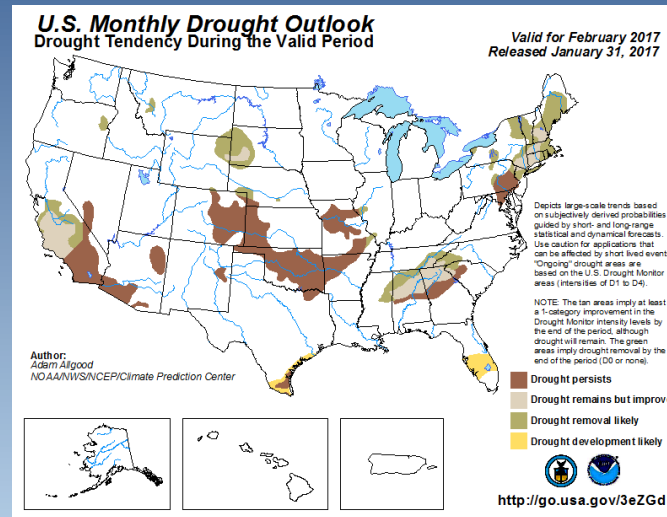
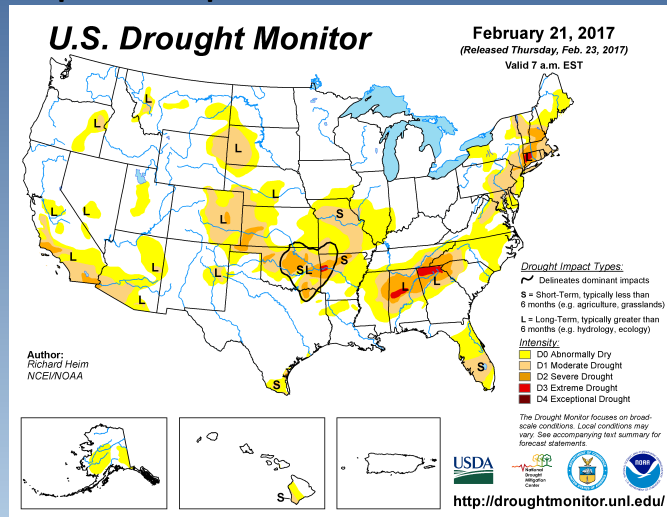
- References the current National Drought Monitor
- Forecasts of tendency of drought for a month or season:
persistence, improvement & development
- Relies on short term to seasonal precipitation and temperature outlooks
- Considers changes in the seasonal climatology of precipitation compared to annual precipitation

Monthly & Seasonal Drought Outlook

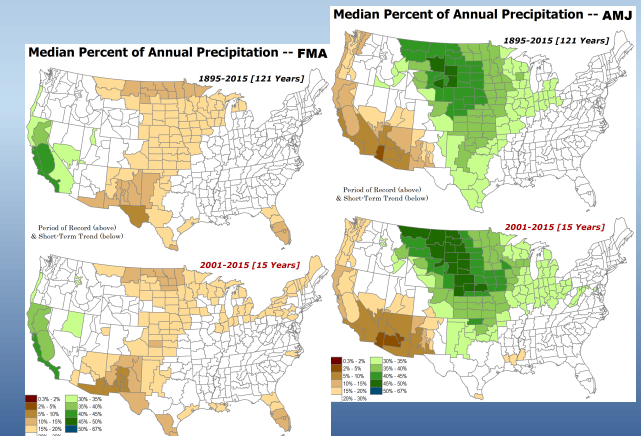
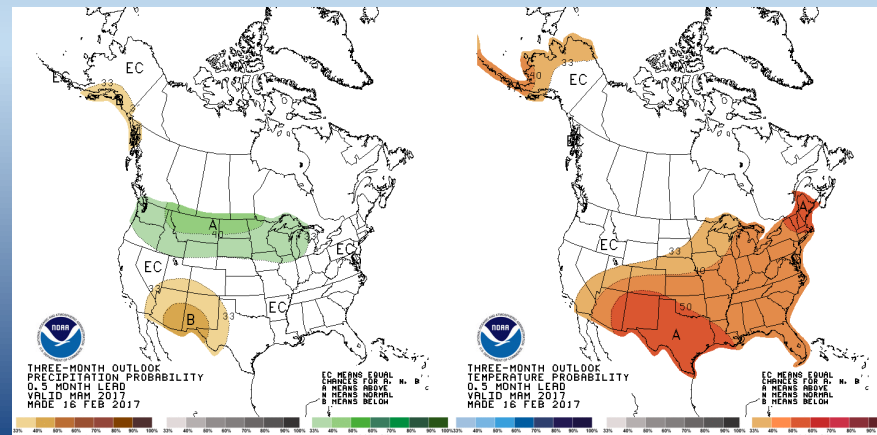


Monthly & Seasonal Drought Outlook

Precipitation & Temperature Outlooks and changes in seasonal precipitation Climatology



Seasonal forecast



Climatology

Thanks